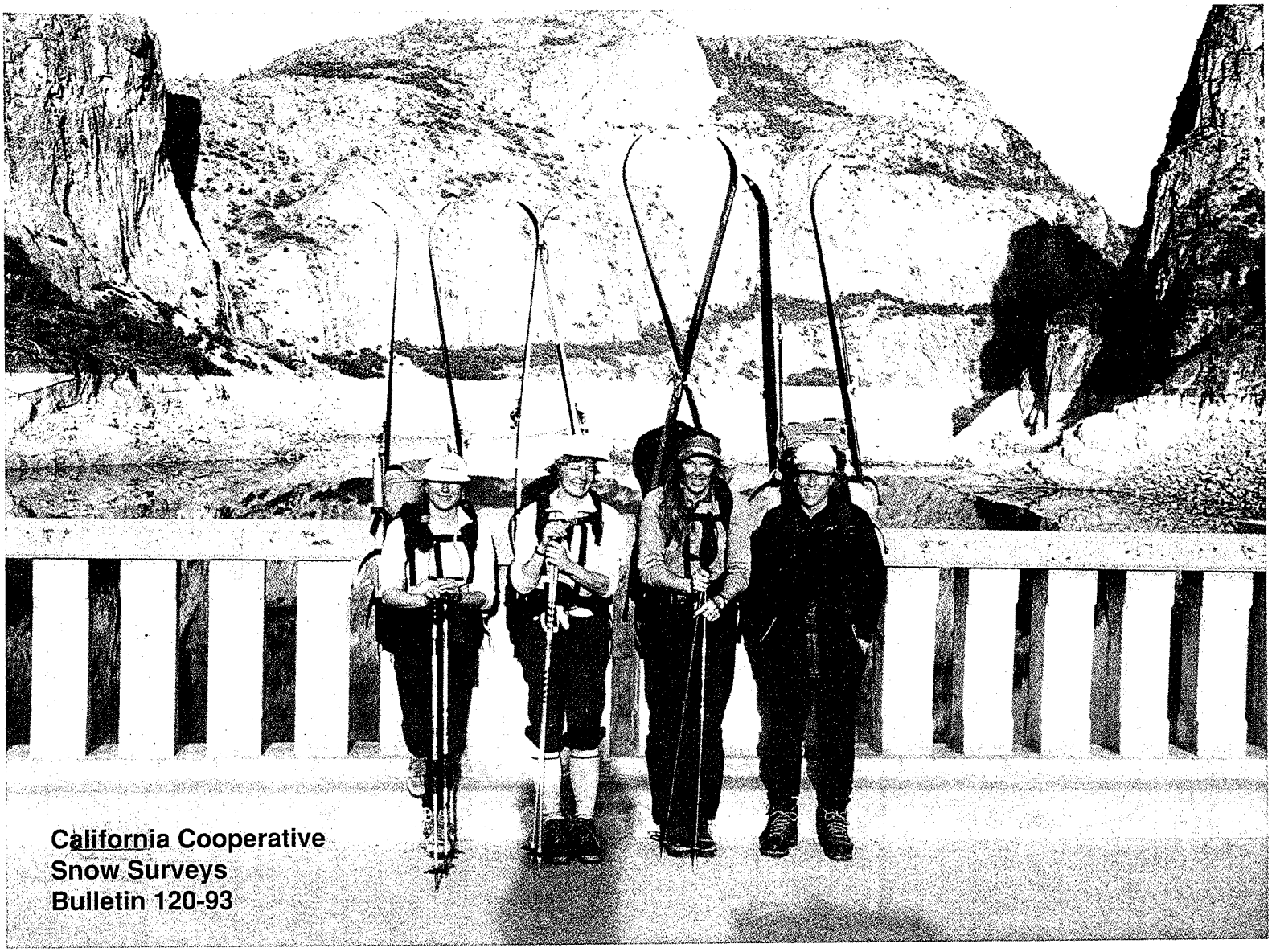

California Cooperative Snow Surveys Bulletin 120-93

State of California
The Resources Agency

Department of
Water Resources

Water Conditions in California

Report 1 February 1, 1993

Douglas P. Wheeler
Secretary for Resources
The Resources Agency

Pete Wilson
Governor
State of California

David N. Kennedy
Director
Department of Water Resources

STATE OF CALIFORNIA
Pete Wilson, Governor

THE RESOURCES AGENCY
Douglas P. Wheeler, Secretary for Resources

Department of Water Resources
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COOPERATING AGENCIES

Public Agencies

Buena Vista Water Storage District
Central California Irrigation District
East Bay Municipal Utility District
Friant Water Users Association
Kaweah Delta Water Conservation District
Kern Delta Water District
Kings River Conservation District
Lower Tule River Irrigation District
Merced Irrigation District
Modesto Irrigation District
Nevada Irrigation District
North Kern Water Storage District
Northern California Power Agency
Oakdale Irrigation District
Omochumne-Hartnell Water District
Oroville-Wyandotte Irrigation District
Placer County Water Agency
Sacramento Municipal Utility District
San Bernardino County Flood Control District
South San Joaquin Irrigation District
Tri-Dam Project
Tulare Lake Basin Water Storage District
Turlock Irrigation District
Yuba County Water Agency
West Basin Municipal Water District

Private Organizations

J.G. Boswell Company
Kaweah River Association
Kings River Water Association
St. Johns River Association
Tule River Association
U.S. Tungsten Corporation
State Water Contractors

Public Utilities

Pacific Gas and Electric Company
Southern California Edison Company
Sierra Pacific Power Company

Municipalities

City of Bakersfield
Water Department
City of Los Angeles
Department of Water and Power
City and County of San Francisco
Hetch Hetchy Water and Power

State Agencies

California Department of Forestry
& Fire Protection
California Department of Water Resources

Federal Agencies

U.S. Department of Agriculture
Forest Service(14 National Forests)
Pacific Southwest Forest and Range
Experiment Station
Soil Conservation Service
U.S. Department of Commerce
National Weather Service
U.S. Department of Interior
Bureau of Reclamation
Geological Survey, Water Resources
Division
National Park Service(3 National Parks)
U.S. Department of Army
Corps of Engineers

Other Cooperative Programs

Nevada Cooperative Snow Surveys
Oregon Cooperative Snow Surveys

SUMMARY OF WATER CONDITIONS
February 1, 1993

After a dry start in November, two months of heavy precipitation have brightened the water supply outlook. With about 40 percent of the season remaining, it is too early to be sure, but prospects are good for above normal runoff in water year 1993. This is a very welcome contrast to the previous six years of drought, and especially last year which didn't produce much moisture until February and March.

Forecasts of April through July runoff are above average. These forecasts are based on conditions now and assumed normal weather for the rest of the season. Forecasted water year runoff is a little less, generally slightly over average.

Snowpack water content for this date is the best in a decade. Snow densities are higher than usual because of some rain on the pack during mid -January. The seasonal accumulation is about 175 percent of normal and is 115 percent of the April 1 average. The pack is relatively uniform throughout all regions, although percentages are highest at the lower elevations. Last year the pack was only 45 percent of average at this time.

Precipitation in January was more than twice normal. Seasonal precipitation statewide is about 155 percent of average. Regional percentages are greatest in the southern portion of the state and range down to 120 percent on the North Coast. Last year, at this time, the statewide precipitation was 60 percent of average, but eventually the water year ended up at 85 percent of average.

Runoff statewide is currently about 95 percent of average compared to only 25 percent one year ago. Runoff through December was still quite low but by the first of January watersheds were wet and significant runoff, even some flooding, occurred in January. Runoff during January was much above average for the month.

Reservoir storage is much better than this time last year showing about a 5 million acre-foot gain during January. Statewide storage at the beginning of February was about 75 percent of average, up from 55 percent a year ago. This is the highest February 1 amount since 1988, the second year of the drought.

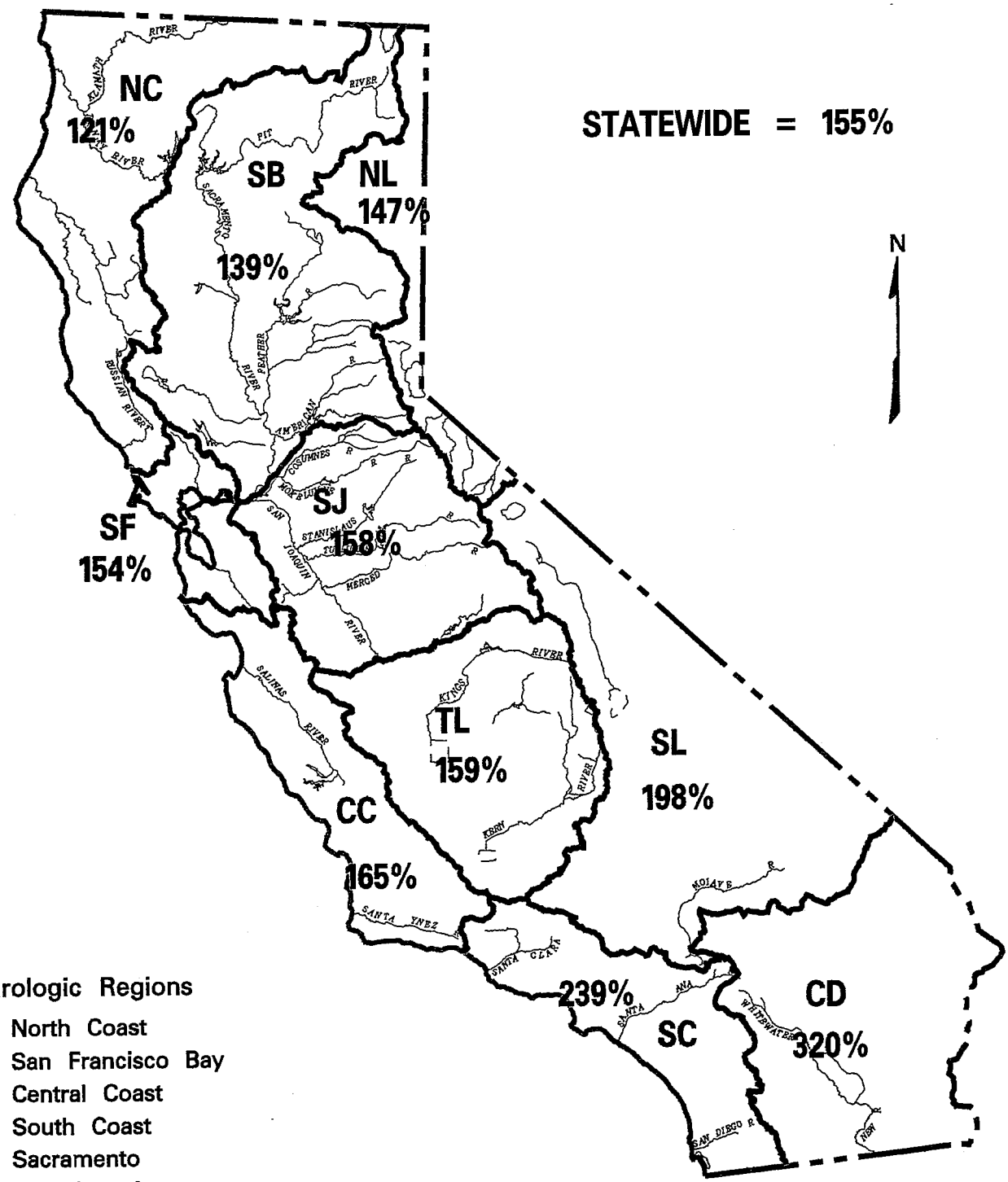
SUMMARY OF WATER CONDITIONS

IN PERCENT OF AVERAGE

HYDROGRAPHIC AREA	PRECIPITATION OCTOBER 1 TO DATE	FEBRUARY 1 SNOW WATER CONTENT	FEBRUARY 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	120	165	55	90	105	100
SAN FRANCISCO BAY	155	--	115	180	--	--
CENTRAL COAST	165	--	95	250	--	--
SOUTH COAST	240	--	145	470	--	--
SACRAMENTO BASIN	140	180	85	90	115	100
SAN JOAQUIN BASIN	160	185	65	120	135	125
TULARE LAKE BASIN	160	165	55	100	120	110
NORTH LAHONTAN	145	165	15	40	120	100
SOUTH LAHONTAN	200	165	80	60	110	90
COLORADO DESERT	320	--	--	--	--	--
STATEWIDE	155	175	75	95	120	110

SEASONAL PRECIPITATION

IN PERCENT OF AVERAGE TO DATE
OCTOBER 1, 1992 TO JANUARY 31, 1993



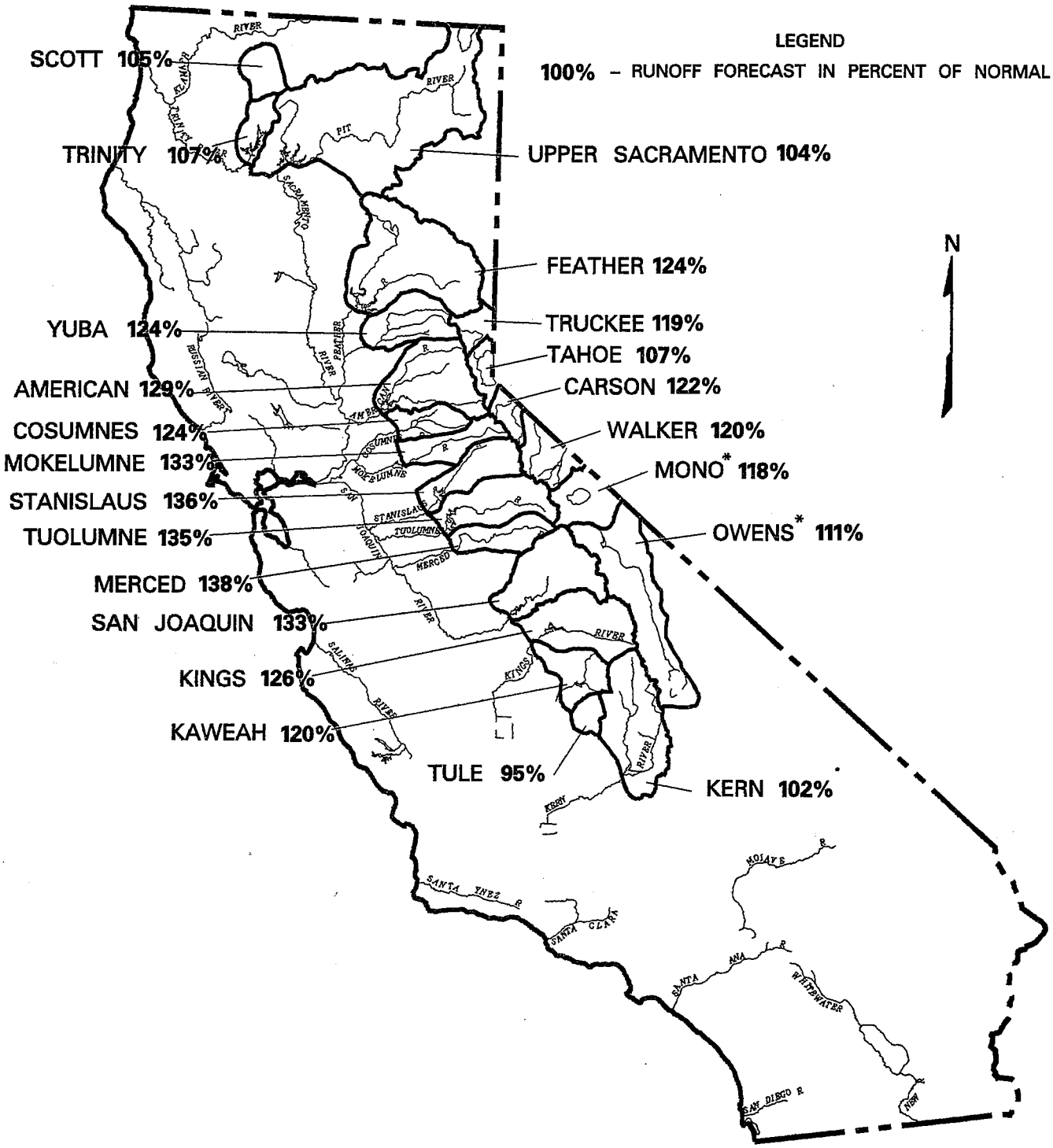
STATEWIDE = 155%

Hydrologic Regions

NC – North Coast
SF – San Francisco Bay
CC – Central Coast
SC – South Coast
SB – Sacramento
SJ – San Joaquin
TL – Tulare Lake
NL – North Lahontan
SL – South Lahontan
CD – Colorado Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

FORECAST OF APRIL – JULY
UNIMPAIRED SNOWMELT RUNOFF
FEBRUARY 1, 1993



* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

FORECASTS OF APRIL-JULY UNIMPAIRED RUNOFF FOR CENTRAL VALLEY STREAMS FEBRUARY 1, 1993

DRAINAGE BASIN AND WATERSHED	April through July Unimpaired Runoff in 1,000 Acre-Feet					
	HISTORICAL			FORECASTS		
	50 Year Average	Maximum of Record	Minimum of Record	April-July Forecast	Percent of Average	80% Prob. Range
SACRAMENTO RIVER BASIN						
Upper Sacramento River						
Sacramento River at Shasta Lake	297	702	39	280	94	
McCloud River at Shasta Lake	411	850	185	400	97	
Pit River at Shasta Lake	1,062	1,796	480	1,080	102	
Total inflow to Shasta Lake	1,824	3,189	726	1,900	104	1,250-2,800
Sacramento River above Bend Bridge, near Red Bluff	2,491	4,674	943	2,570	103	1,600-3,900
Feather River						
Feather River at Lake Almanor near Pratville	333	675	120	380	114	
North Fork at Pulga	1,028	2,416	243	1,250	122	
Middle Fork near Clio (3)	86	518	4	100	116	
South Fork at Ponderosa Dam	110	267	13	130	118	
Total inflow to Oroville Reservoir	1,857	4,676	392	2,300	124	1,700-3,350
Yuba River						
North Yuba below Goodyears Bar	286	647	51	350	122	
Inflow to Jackson Mdws and Bowman Reservoirs	112	236	25	130	116	
South Yuba at Langs Crossing	233	481	57	280	120	
Yuba River at Smartville	1,047	2,424	200	1,300	124	1,000-2,000
American River						
North Fork at North Fork Dam	262	716	43	330	126	
Middle Fork near Auburn	522	1,406	100	660	126	
Silver Creek below Camino Diversion Dam	173	386	37	230	133	
Total inflow to Folsom Reservoir	1,284	3,074	229	1,660	129	1,150-2,550
Sacramento River at Sacramento						
SAN JOAQUIN RIVER BASIN						
Cosumnes River at Michigan Bar	129	363	8	160	124	100-280
Mokelumne River						
North Fork near West Point (4)	437	829	104	550	126	
Total inflow to Pardee Reservoir	465	1,065	102	620	133	450-850
Stanislaus River						
Middle Fork below Beardsley Dam	334	702	64	450	135	
North Fork inflow to McKay's Point Dam	224	503	34	350	156	
Total inflow to Melones Reservoir	713	1,710	116	970	136	730-1,350
Tuolumne River						
Cherry Creek and Eleanor Creek near Hetch Hetchy	322	727	97	400	124	
Tuolumne River near Hetch Hetchy	606	1,392	153	800	132	
Total inflow to Don Pedro Reservoir	1,200	2,682	301	1,620	135	1,230-2,250
Merced River						
Merced River at Pohono Bridge	362	888	80	500	138	
Total inflow to Exchequer Reservoir	617	1,587	123	850	138	630-1,200
San Joaquin River						
San Joaquin River at Mammoth Pool (2)	1,014	2,279	235	1,300	128	
Big Creek below Huntington Lake (2)	95	264	11	120	126	
South Fork near Florence Lake (2)	202	511	58	250	124	
Total inflow to Millerton Lake	1,228	3,355	262	1,630	133	1,200-2,200
San Joaquin River near Vernalis						
TULARE LAKE BASIN						
Kings River						
North Fork Kings River near Cliff Camp	239	565	50	290	121	
Total inflow to Pine Flat Reservoir	1,203	3,114	273	1,520	126	1,080-2,050
Kaweah River at Terminus Reservoir	284	814	61	340	120	220-480
Tule River at Success Reservoir	63	256	2	60	95	35-110
Kern River						
Kern River near Kernville	373	1,203	83	370	99	
Total inflow to Isabella Reservoir	462	1,657	84	470	102	290-820

(1) All 50-year averages are based on data for water years 1941-1990 except:
(2) 45-year average based on years 1936-80. (4) 36-year average based on years 1936-71.
(3) 44-year average based on years 1936-79. (5) See inside back cover for definition of unimpaired runoff and 80 percent probability ranges.

FORECASTS OF WATER YEAR UNIMPAIRED RUNOFF FOR CENTRAL VALLEY STREAMS FEBRUARY 1, 1993

Water Year October through September Unimpaired Runoff in 1,000's Acre-Feet												
HISTORICAL			* DISTRIBUTION								FORECASTS	
50 Year Average	Maximum of Record	Minimum of Record	October through January	February	March	April	May	June	July	August and September	Water Year Forecast	Percent of Average
856	1,964	165										
1,244	2,353	577										
3,145	5,150	1,484										
5,987	10,796	2,479	1,600	700	820	830	510	320	240	430	5,450 (4,100-7,300)	91
8,664	17,180	3,294	2,730	1,150	1,250	1,100	750	420	300	500	8,200 (6,100-11,000)	95
780	1,269	366										
2,417	4,400	666										
219	637	24										
291	562	32										
4,617	9,492	994	1,040	540	650	890	850	380	180	220	4,750 (3,500-6,600)	103
564	1,056	102										
181	292	30										
379	565	98										
2,390	4,926	369	610	270	320	480	530	240	50	50	2,550 (1,900-3,700)	107
616	1,234	66										
1,070	2,575	144										
318	705	59										
2,736	6,381	349	665	330	430	580	650	350	80	35	3,120 (2,300-4,500)	114
												101
385	1,253	20	140	70	80	85	50	20	5	5	455 (340-700)	118
626	1,009	197										
748	1,800	129	125	60	90	160	250	180	30	5	900 (680-1,200)	120
471	929	88										
1,150	2,952	155	220	100	150	250	390	260	70	20	1,460 (1,150-1,950)	127
461	1,147	123										
770	1,661	258										
1,882	4,430	383	350	140	200	340	550	530	200	30	2,340 (1,850-3,150)	124
461	1,020	92										
966	2,859	150	230	70	110	190	300	280	80	20	1,280 (1,000-1,750)	133
1,337	2,964	308										
112	298	14										
248	653	71										
1,776	4,642	362	250	100	140	300	550	530	250	100	2,220 (1,700-2,900)	125
												126
284	607	58										
1,669	4,294	383	230	80	120	280	540	500	200	80	2,030 (1,500-2,700)	122
444	1,402	92	60	30	50	80	130	100	30	10	490 (330-670)	110
145	615	16	30	20	25	25	20	10	5	5	140 (90-240)	97
558	1,577	163										
717	2,309	175	70	40	60	100	160	140	70	45	685 (440-1,150)	96

* Unimpaired runoff to date e Estimated

FORECASTS OF APRIL-JULY UNIMPAIRED RUNOFF FOR SELECTED CALIFORNIA STREAMS

FEBRUARY 1, 1993

DRAINAGE BASIN AND WATERSHED	April through July Unimpaired Runoff in 1,000 Acre-Feet				
	HISTORICAL			FORECASTS	
	50 Year Average(1)	Maximum of Record	Minimum of Record	April-July Forecast	Percent of Average
NORTH COAST AREA					
Trinity River at Lewiston	653	1,593	80	700	107
Scott River at Ft. Jones	200	*	*	210	105
Upper Klamath Lake(1)(2)(5)	521	1,151	177	545	105
LAHONTAN AREA					
Truckee River, Lake Tahoe to Farad accretion	268	713	58	320	119
Lake Tahoe Rise in feet (assuming gates closed)	1.5	3.75	0.23	1.6	107
East Carson River near Gardnerville	186	407	43	230	124
West Carson River at Woodfords	54	131	12	65	120
East Walker River near Bridgeport	63	209	7	75	119
West Walker River near Coleville	148	330	35	180	122
Owens River(3)	233	579	96	256	111

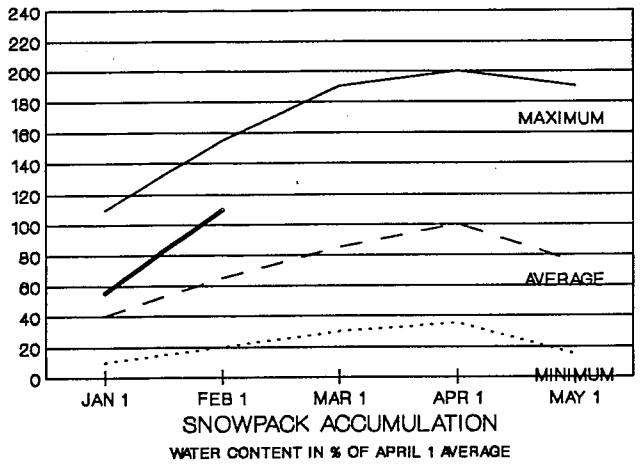
(1)Forecast period of April-September

(2)Forecast by U.S. Soil Conservation Service, Portland, Or.

(3)Forecast by Dept. of Water and Power, City of Los Angeles

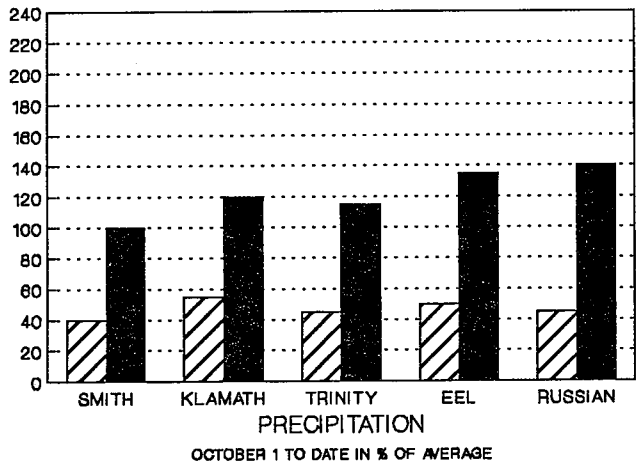
(4)Inside back cover for definition of unimpaired runoff.

(5)Average period of 25 years

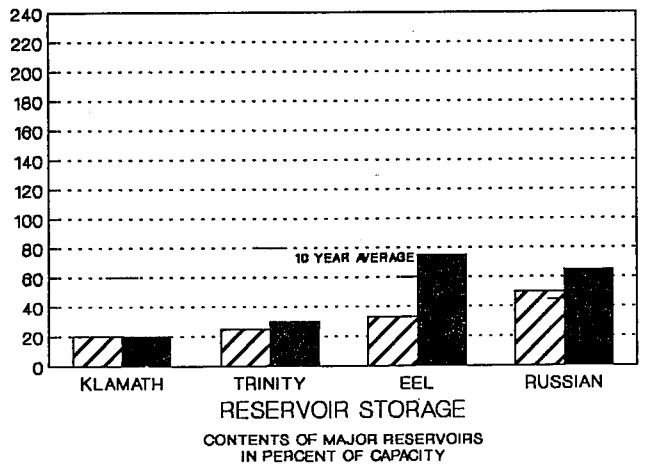


NORTH COAST AREA

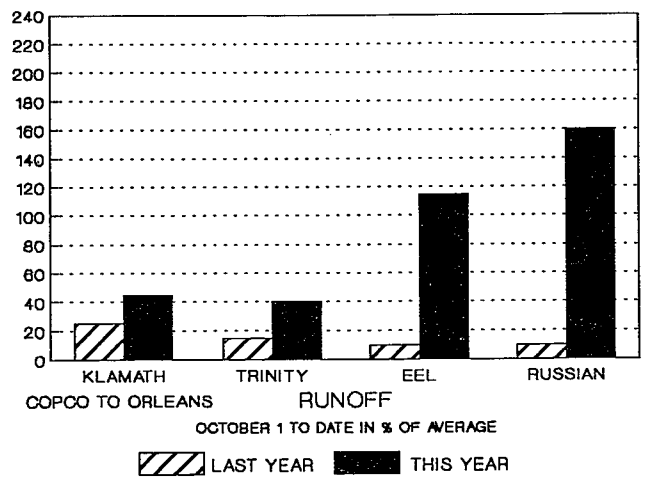
SNOWPACK - First of the month measurements made at 12 snow courses indicate an area wide snow water equivalent of 29.9 inches. This is 165 percent of the average for this date and about 110 percent of the seasonal (April 1) average. Last year at this time the pack was holding 11.1 inches of water.



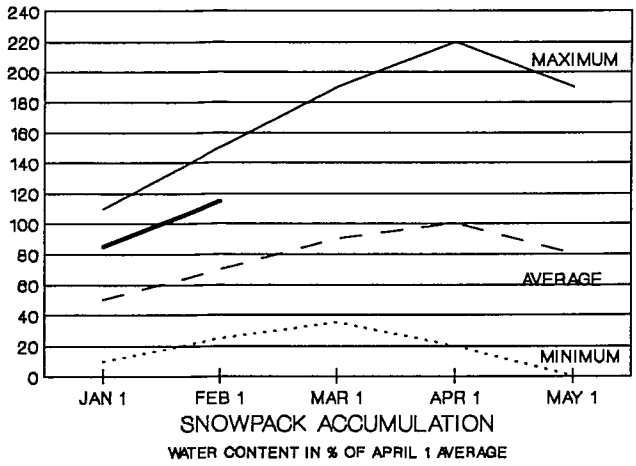
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 120 percent of normal. Precipitation last month was about 155 percent of the monthly average. Seasonal precipitation at this time last year stood at 45 percent of normal.



RESERVOIR STORAGE - First of the month storage in 7 reservoirs was 1.2 million acre-feet which is 55 percent of average. About 40 percent of available capacity was being used. Storage in these reservoirs at this time last year was 40 percent of average.

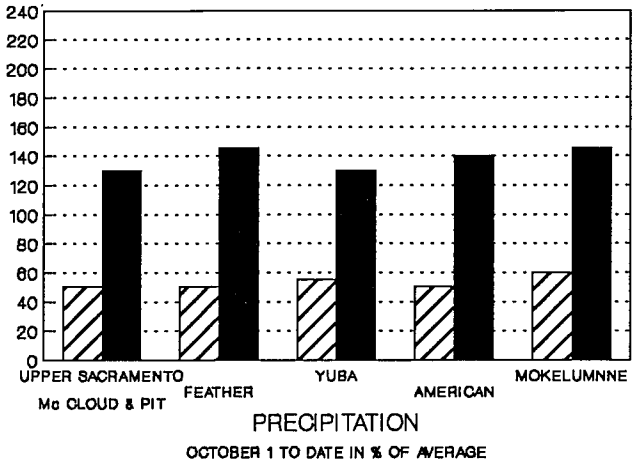


RUNOFF - Seasonal runoff of streams draining the area totaled 5.0 million acre-feet which is 95 percent of average for this period. Last year, runoff for the same period was 15 percent of average.

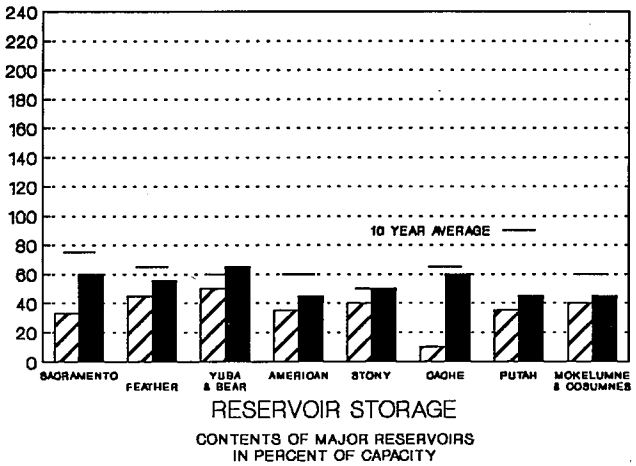


SACRAMENTO BASIN

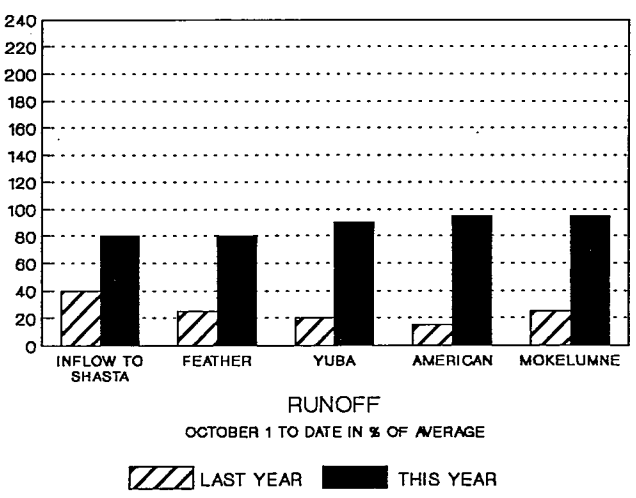
SNOWPACK - First of the month measurements made at 68 snow course indicate a basin wide snow water equivalent of 36.0 inches. This is 180 percent of the average for this date and about 115 percent of the April 1 seasonal average. Last year at this time, the pack was holding 10.2 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the Sacramento Basin was 140 percent of normal. Precipitation last month was 175 percent of the monthly average. Seasonal precipitation at this time last year stood at 50 percent of average.

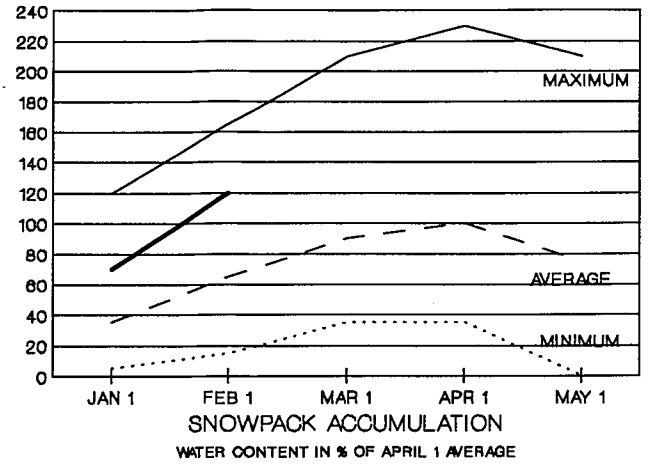


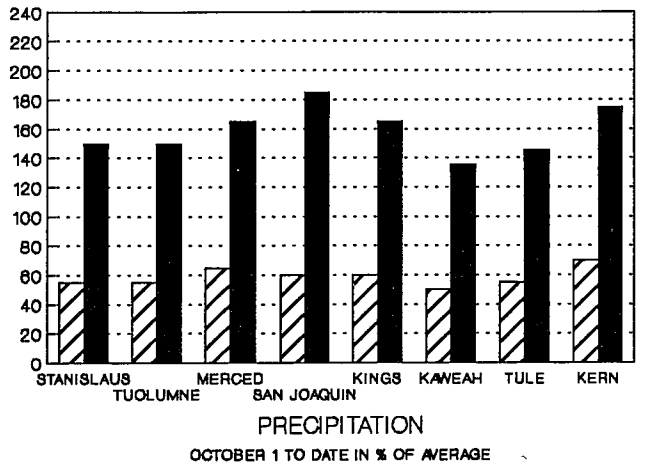
RESERVOIR STORAGE - First of the month storage in 43 reservoirs was 9.1 million acre-feet which is 85 percent of average. About 55 percent of available capacity was being used. Storage in these reservoirs was about 50 percent of average at this time last year.

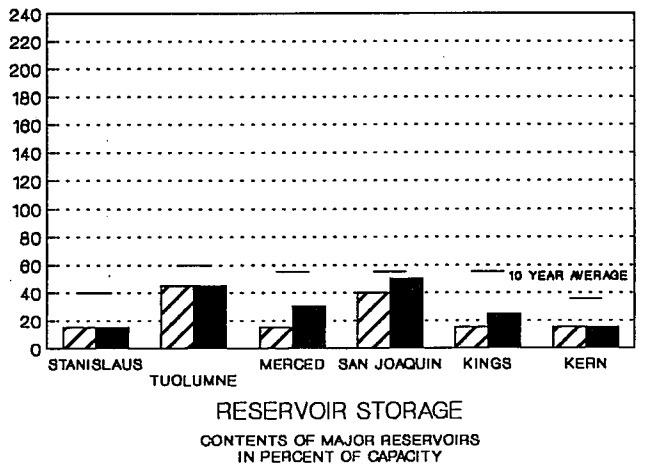


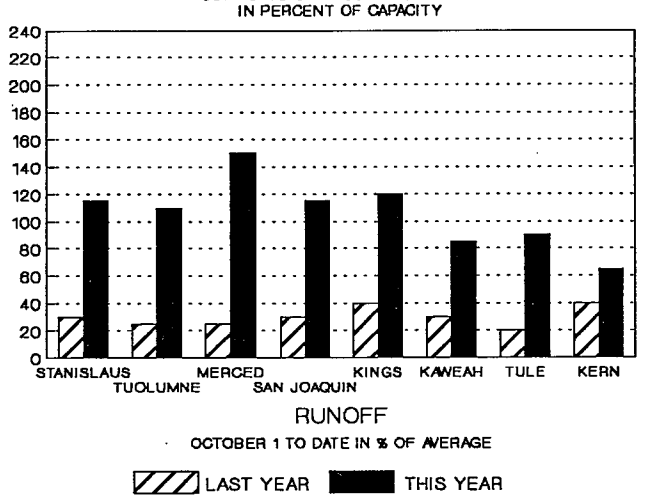
RUNOFF - Seasonal runoff from streams draining into the basin totaled 5.0 million acre-feet which is about 90 percent of average for this period. Last year runoff for the same period was 30 percent of average.

The Sacramento River Index for the year is forecast at 18.6 million acre-feet assuming median meteorological conditions for the remainder of the year. This classifies the year as "above normal" in the Sacramento-San Joaquin Delta according to the State Water Resources Control Board's Decision 1485. The SRI at this time last year was forecasted to be 8.0 million acre-feet.









SAN JOAQUIN AND TULARE LAKE BASINS

SNOWPACK - First of the month measurements made at 60 San Joaquin Basin snow courses indicate a basin wide snow water equivalent of 38.9 inches which is 185 percent of the average for this date and 120 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 9.3 inches of water.

At the same time, 42 Tulare Lake Basin snow courses indicated a basin-wide snow water equivalent of 25.2 inches which is 110 percent of the average for this date and 165 percent of the seasonal average. Last year at this time, the Basin was holding 5.4 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin Basin was 160 percent of normal. Precipitation last month was 235 percent of the monthly average. Seasonal precipitation at this time last year stood at 60 percent of normal.

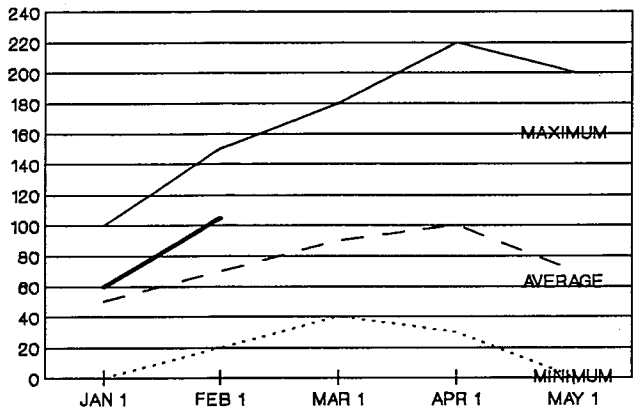
Seasonal precipitation on the Tulare Lake Basin was 160 percent of normal. Precipitation last month was 225 percent of the monthly average. Seasonal precipitation at this time last year stood at 65 percent of normal.

RESERVOIR STORAGE - First of the month storage in 33 San Joaquin Basin reservoirs was 4.4 million acre-feet which is 65 percent of average. About 40 percent of available capacity was being used. Storage in these reservoirs at this time last year was 60 percent of average.

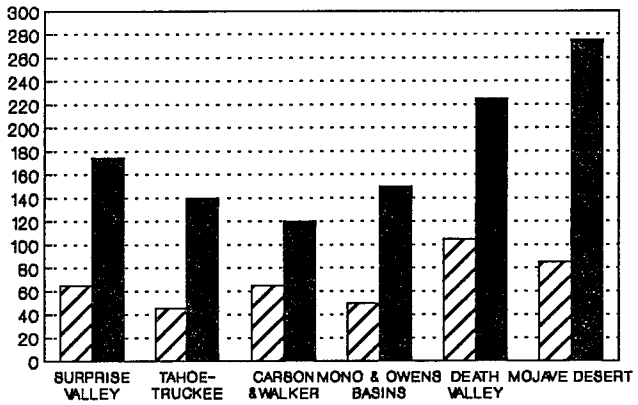
First of the month storage in 6 Tulare Lake Basin reservoirs was 431 thousand acre-feet which is 55 percent of average. About 20 percent of available capacity was being used. Storage in these reservoirs at this time last year was 40 percent of average.

RUNOFF - Seasonal runoff of streams draining into the San Joaquin Basin totaled 1.3 million acre-feet which is 115 percent of average for this period. Last year, runoff for this same period was 25 percent of average.

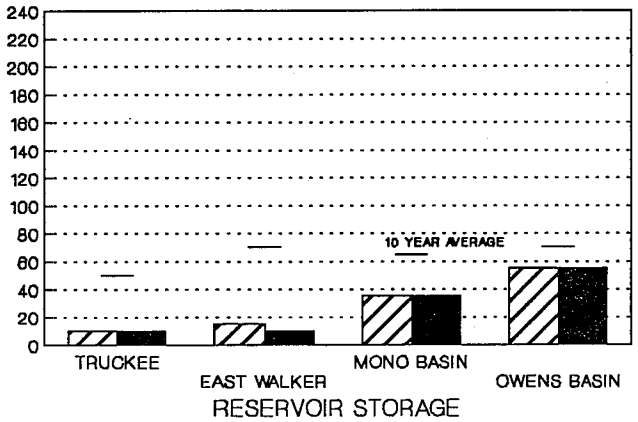
Seasonal runoff of streams draining into the Tulare Lake Basin totaled 392 thousand acre-feet which is 95 percent of average for this period. Last year, runoff for this same period was 35 percent of average.



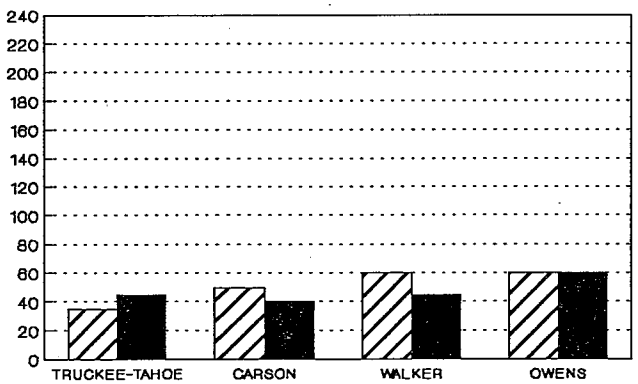
SNOWPACK ACCUMULATION
WATER CONTENT IN % OF APRIL 1 AVERAGE



PRECIPITATION
OCTOBER 1 TO DATE IN % OF AVERAGE



RESERVOIR STORAGE
CONTENTS OF MAJOR RESERVOIRS IN PERCENT OF CAPACITY



RUNOFF
OCTOBER 1 TO DATE IN % OF AVERAGE

LAST YEAR THIS YEAR

NORTH AND SOUTH LAHONTAN AREA

SNOWPACK - First of the month measurements made at 9 North Lahontan snow courses indicate an area wide snow water equivalent of 31.2 inches which is 165 percent of the average for this date and 105 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 6.6 inches of water.

At the same time, 20 South Lahontan courses indicated an area-wide snow water equivalent of 25.3 inches which is 165 percent of the average for this date and 105 percent of the seasonal average. Last year at this time, the pack was holding 8.1 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) over the North Lahontan area averaged 145 percent of normal. Precipitation last month was 185 percent of the monthly average. Seasonal precipitation at this time last year stood at 50 percent of normal.

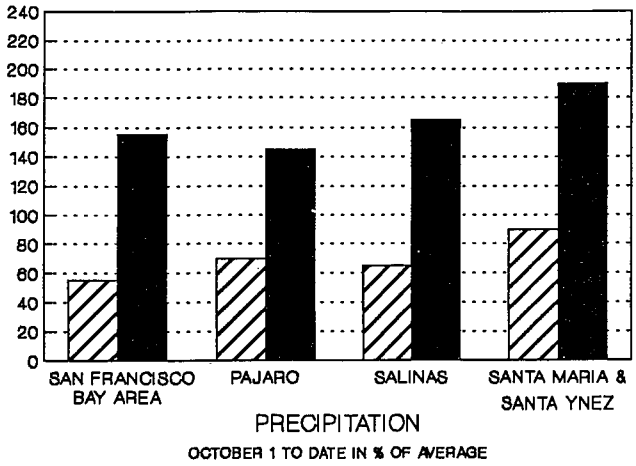
Seasonal precipitation over the South Lahontan area was 200 percent of normal. Last month's precipitation was 285 percent of the monthly average. Seasonal precipitation at this time last year stood at 75 percent of normal.

RESERVOIR STORAGE - First of the month storage in 5 North Lahontan reservoirs was 94 thousand acre-feet which is 15 percent of average. About 10 percent of available capacity was being used. Storage in these reservoirs at this time last year was 15 percent of average. Lake Tahoe was 1.8 feet below its natural rim on February 1.

First of the month storage in 8 South Lahontan reservoirs was 232 thousand acre-feet which is 80 percent of average. About 60 percent of available capacity was being used. Storage in these reservoirs at this time last year was 80 percent of average.

RUNOFF - Seasonal runoff of streams draining the North Lahontan area totaled 66 thousand acre-feet which is 45 percent of average for this period. Last year, runoff for this same period was 45 percent of average.

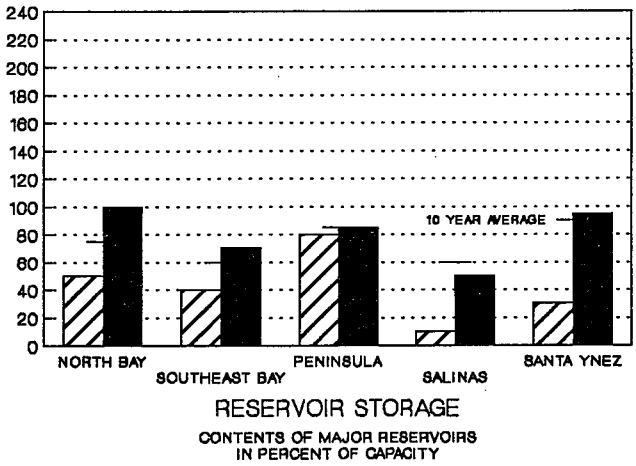
Seasonal runoff of the Owens River in the South Lahontan area totaled 28 thousand acre-feet which is 60 percent of



SAN FRANCISCO AND CENTRAL COAST AREAS

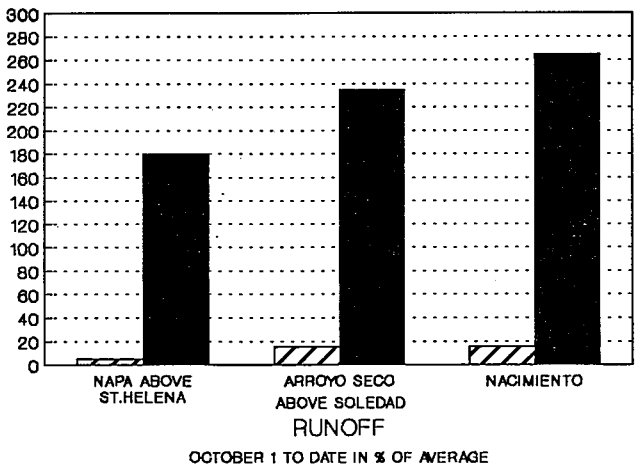
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 155 percent of normal. Precipitation last month was 200 percent of the monthly average. Seasonal precipitation at this time last year stood at 55 percent of normal.

Seasonal precipitation on the Central Coast area averaged 165 percent of normal. Precipitation last month was 245 percent of the monthly average. Seasonal precipitation at this time last year stood at 75 percent of normal.



RESERVOIR STORAGE - First of the month storage in 18 major Bay area reservoirs was 530 thousand acre-feet which is 115 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 70 percent of average.

First of the month storage in 6 major Central Coast reservoirs was 561 thousand acre-feet which is 95 percent of average. About 60 percent of available capacity was being used. Storage in these reservoirs at this time last year was 25 percent of average.



RUNOFF - Seasonal runoff of the Napa River in the San Francisco Bay area totaled 60 thousand acre-feet which is 180 percent of average for this period. Last year, runoff for this same period was 3 percent of average.

Seasonal runoff of selected Central Coast streams totaled 331 thousand acre-feet which is 255 percent of average for this period. Last year, runoff for this same period was about 20 percent of average.

LAST YEAR THIS YEAR

SOUTH COAST AND COLORADO RIVER AREAS

PRECIPITATION - October through January (seasonal) precipitation on the South Coast area was 240 percent of normal. January precipitation was 410 percent of the monthly average. Seasonal precipitation at this time last year stood at 80 percent of normal.

Seasonal precipitation on the Colorado Desert area was 320 percent of normal. Precipitation in January was 660 percent of average. Seasonal precipitation at this time last year stood at 100 percent of average.

RESERVOIR STORAGE - February 1 storage in 29 major South Coast area reservoirs was 1.7 million acre-feet or 145 percent of average. About 85 percent of available capacity was being used. Storage in these reservoirs at this time last year was 110 percent of average.

On February 1 combined storage in Lakes Powell, Mead, Mohave and Havasu was about 36 million acre-feet or 95 percent of average. About 65 percent of available capacity was in use. Last year at this time, these reservoirs were storing 95 percent of average.

RUNOFF - Seasonal runoff from selected South Coast streams totaled 87 thousand acre-feet which is 465 percent of average. Runoff from these streams during January totaled 80 thousand acre-feet or 1035 percent of average. Seasonal runoff from these streams last year was 30 percent of average.

COLORADO - The February 1 snowpack in the Upper Colorado River basin according to the U.S. Soil Conservation Service reports was 107 percent of average and ranges from 81 percent in the Green Basin to 141 percent in the San Juan Basin.

The April through July inflow to Lake Powell is forecast to be 7.9 million acre-feet which is 98 percent of normal.

CENTRAL VALLEY PROJECT

Water year forecasts for runoff into major CVP storage reservoirs range from 91 percent to 127 percent of average. CVP storage on September 30, 1992 was 3.9 million acre-feet. As of January 31, 1993, storage has increased to 4.8 million acre-feet, which is about 74 percent of normal for this date. The Bureau of Reclamation will advise its water customers by February 15th as to the availability of water deliveries in 1993.

STATE WATER PROJECT

On February 1, conservation storage (Lake Oroville plus the state's share of San Luis) was 2.8 million acre-feet, which is 61 percent of capacity. The water supply picture improved greatly during the month of January to the extent that the approved level of water delivery to State contractors was raised to 40 percent, with the possibility of additional increases currently under study.

MAJOR WATER DISTRIBUTION PROJECTS

RESERVOIR STORAGE

(AVERAGES BASED ON PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AS OF JANUARY 31 1992 1,000 AF	1993 1,000 AF	PERCENT AVERAGE
STATE WATER PROJECT					
Oroville	3,540	2,487	1,277	2,002	81
San Luis SWP	1,060	900	524	798	89
Lake Del Valle	77	30	25	40	133
Silverwood	73	64	73	66	103
Pyramid Lake	171	162	159	167	103
Castaic Lake	324	243	305	267	110
Perris Reservoir	132	110	124	122	111
CENTRAL VALLEY PROJECT					
Clair Engle Lake	2,450	1,853	547	751	41
Shasta Lake	4,550	3,244	1,343	2,765	85
Whiskeytown	241	208	156	182	87
Folsom	1,010	547	349	478	87
New Melones	2,420	1,559	328	264	17
Millerton Lake	521	309	230	344	111
San Luis CVP	980	740	582	392	53
COLORADO RIVER PROJECT					
Lake Mead	26,300	19,706	19,780	20,627	105
Lake Powell	25,000	16,331	13,897	13,104	80
Lake Mohave	1,810	1,587	1,672	1,735	109
Lake Havasu	619	538	550	570	106
EAST BAY MUNICIPAL UTILITY DISTRICT					
Pardee	210	176	192	184	104
Camanche	432	253	116	134	53
East Bay (4 reservoirs)	151	122	117	130	107
CITY & COUNTY OF SAN FRANCISCO					
Hetch Hetchy	360	146	126	105	72
Cherry Lake	269	105	98	96	91
Lake Eleanor	28	9	1	3	34
South Bay (4 reservoirs)	223	159	116	176	110
CITY OF LOS ANGELES (DWP)					
Crowley Lake (Long Valley Reservoir)	183	124	114	116	94
Grant Lake	48	25	16	18	72
Other Aqueduct Storage (6 reservoirs)	95	62	71	45	73

DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER
TELEMETERED SNOW WATER EQUIVALENTS - FEBRUARY 1, 1993

BASIN NAME / STATION NAME	AGENCY	ELEV FEET	APR 1 AVG	TODAY	INCHES OF WATER EQUIVALENT PERCENT OF APR 1	24 HRS AGO	1 WEEK AGO
TRINITY RIVER							
PETERSON FLAT	USBR	7150	----	30.2	----	30.2	30.7
RED ROCK MOUNTAIN	USBR	6700	39.6	37.3	94%	37.3	37.3
BONANZA KING	USBR	6450	40.5	28.9	71%	28.9	28.7
SHIMMY LAKE	USBR	6200	40.3	43.2	107%	41.9	44.6
MIDDLE BOULDER #3	USBR	6200	28.3	22.2	79%	22.9	23.5
HIGHLAND LAKES	USBR	6030	29.9	32.0	107%	32.2	32.2
SCOTTS MOUNTAIN	USBR	5900	----	25.3	----	25.3	25.3
MUMBO BASIN	USBR	5700	22.4	28.8	129%	28.8	29.0
BIG FLAT	USBR	5100	----	24.1	----	24.2	24.5
SACRAMENTO RIVER							
CEDAR PASS	SCS	7100	18.1	18.1	100%	18.2	17.7
BLACKS MOUNTAIN	DWR	7100	----	14.4	----	14.4	14.6
SAND FLAT	USBR	6750	42.4	43.5	103%	----	----
MEDICINE LAKE	USBR	6700	----	25.2	----	25.2	25.2
ADIN MOUNTAIN	SCS	6350	13.6	17.2	126%	17.1	17.0
SNOW MOUNTAIN	USBR	5950	27.0	43.7	162%	43.7	44.1
SLATE CREEK	USBR	5600	29.0	31.3	108%	31.3	29.5
STOUTS MEADOW	USBR	5400	36.0	41.3	115%	40.8	36.7
FEATHER RIVER							
KETTLEROCK	DWR	7300	25.5	30.4	119%	30.4	30.7
GRIZZLY	DWR	6900	29.7	30.6	103%	30.6	30.2
PILOT PEAK	DWR	6800	52.6	44.2	84%	43.9	43.7
GOLD LAKE	DWR	6750	36.5	39.6	108%	39.6	39.2
HUMBUG	DWR	6500	28.0	41.0	147%	41.3	43.0
RATTLESNAKE	DWR	6100	14.0	----	----	----	----
BUCKS LAKE	DWR	5750	44.7	47.5	106%	47.0	43.7
FOUR TREES	DWR	5150	20.0	39.4	197%	39.1	38.5
YUBA & AMERICAN RIV							
LAKE LOIS	DWR	8800	----	49.7	----	49.7	51.6
SCHNEIDERS	SMUD	8750	34.5	40.7	118%	40.6	40.3
CAPLES LAKE COURSE	USBR	7800	30.9	31.6	102%	31.6	31.2
ALPHA	SMUD	7600	35.9	37.9	106%	37.8	37.6
BETA	DWR	7600	----	36.6	----	36.6	36.6
FORNI RIDGE	USBR	7600	37.0	37.6	102%	37.6	37.6
SILVER LAKE	USBR	7100	22.7	29.8	131%	29.9	30.0
CENT SIERRA SNOW LAB	USFS	6950	33.6	39.1	116%	39.1	39.8
HUYSINK	USBR	6600	42.6	30.7	72%	30.9	30.9
VAN VLECK	SMUD	6700	35.9	40.8	114%	41.0	41.2
ROBBS SADDLE	SMUD	5900	21.4	27.0	126%	27.1	27.1
GREEK STORE	USBR	5600	21.0	32.2	153%	32.2	32.2
BLUE CANYON	USBR	5280	9.0	15.6	173%	15.6	15.7
ROBBS POWERHOUSE	SMUD	5150	5.2	15.0	288%	15.1	15.6
DEADMAN CREEK	USBR	9250	37.2	26.4	71%	26.4	25.9
HIGHLAND MEADOW	USBR	8800	47.9	40.8	85%	40.8	39.7
GIANELLI MEADOW	USBR	8350	55.5	46.3	83%	46.3	46.3
LOWER RELIEF VALLEY	DWR	8100	41.2	----	----	----	----
BLUE LAKES	SCS	8000	33.1	29.2	88%	29.1	28.7
MUD LAKE	SMUD	7900	44.9	49.7	111%	49.4	49.1
STANISLAUS MEADOW	USBR	7750	47.5	43.8	92%	43.7	43.0
BLOODS CREEK	USBR	7200	35.5	----	----	----	28.1
BLACK SPRINGS	USBR	6500	32.0	33.1	103%	32.9	32.9
TUOLUMNE & MERCED R.							
DANA MEADOWS	DWR	9800	27.7	25.6	92%	25.6	25.4
SLIDE CANYON	DWR	9200	----	37.9	----	38.0	36.4
SNOW FLAT	DWR	8700	44.1	42.5	96%	41.8	41.2
TUOLUMNE MEADOWS	DWR	8600	22.6	22.1	98%	22.1	21.7
HORSE MEADOW	DWR	8400	48.6	46.4	95%	46.4	46.4
OSTRANDER LAKE	DWR	8200	34.8	37.9	109%	37.9	38.6
PARADISE	DWR	7650	----	----	----	----	----
GIN FLAT	DWR	7050	34.2	31.3	92%	31.4	33.4
LOWER KIBBIE	DWR	6600	27.4	30.0	109%	30.1	30.1
SAN JOAQUIN RIVER							
VOLCANIC KNOB	USBR	10100	30.1	28.1	93%	28.1	28.1
AGNEW PASS	USBR	9450	32.3	33.3	103%	33.4	32.7
KAISER POINT	USBR	9200	37.8	33.1	87%	33.1	32.9
GREEN MOUNTAIN	USBR	7900	30.8	38.2	124%	38.0	36.8
TAMARACK SUMMIT	USBR	7600	30.5	37.4	122%	37.4	37.2
CHILKOOT MEADOW	USBR	7150	38.0	37.6	99%	37.6	37.6

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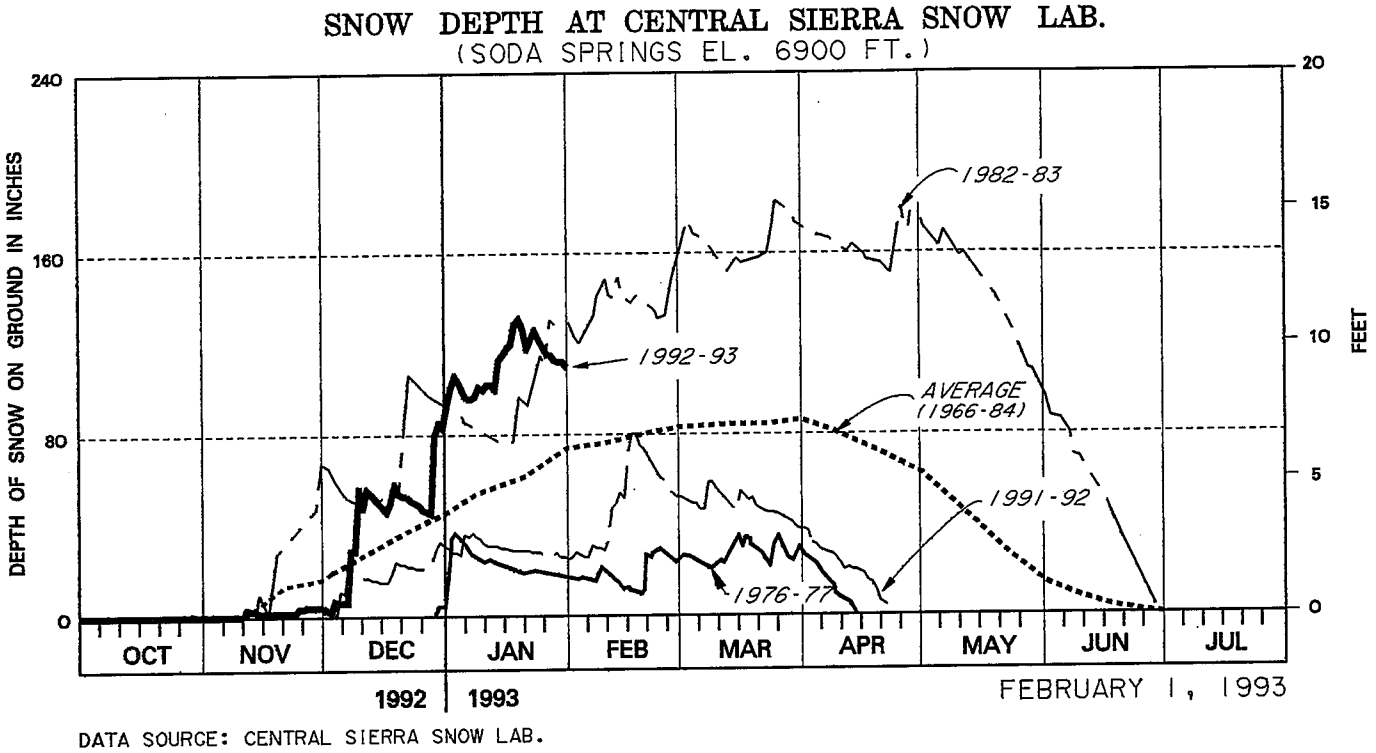
TELEMETERED SNOW WATER EQUIVALENTS - FEBRUARY 1, 1993

BASIN NAME / STATION NAME	AGENCY	ELEV FEET	APR 1 AVG	TODAY	INCHES OF WATER EQUIVALENT PERCENT OF APR 1	24 HRS AGO	1 WEEK AGO
HUNTINGTON LAKE	USBR	7000	20.1	27.6	137%	27.4	27.2
GRAVEYARD MEADOW	USBR	6900	18.8	31.7	169%	31.7	----
POISON RIDGE	USBR	6900	28.9	40.1	139%	40.3	41.5
KINGS RIVER							
BISHOP PASS	DWR	11200	----	27.4	----	27.5	26.1
CHARLOTTE LAKE	DWR	10400	----	21.5	----	21.5	21.2
STATE LAKES	USCE	10400	29.0	26.9	93%	26.6	25.6
MITCHELL MEADOW	USCE	10375	32.9	32.9	100%	32.9	32.9
BLACKCAP BASIN	USBR	10300	34.3	33.3	97%	33.3	32.7
UPPER BURNT CORRAL	DWR	9700	34.6	41.8	121%	41.8	42.5
WEST WOODCHUCK MDW	USCE	9100	32.8	32.0	98%	32.0	32.2
BIG MEADOWS	DWR	7600	25.9	28.8	111%	29.0	29.8
KAWEAH & TULE RIVERS							
QUAKING ASPEN	DWR	7200	21.0	23.4	111%	23.4	24.0
GIANT FOREST	USCE	6400	10.0	16.8	168%	16.9	17.1
KERN RIVER							
UPPER TYNDALL CREEK	USCE	11500	27.7	21.6	78%	21.5	----
CRABTREE	DWR	10700	19.8	12.2	62%	12.4	12.4
CHAGOOPA PLATEAU	DWR	10300	21.8	20.9	96%	20.9	20.3
PASCOES	USCE	9150	24.9	24.4	98%	24.4	----
TUNNEL	DWR	8950	15.6	15.6	100%	15.6	15.5
WET MEADOW	USCE	8900	30.3	25.0	83%	25.0	----
CASA VIEJA MDW	DWR	8400	20.9	19.6	94%	19.6	19.6
BEACH MEADOW	DWR	7650	11.0	12.8	117%	12.7	12.7
SURPRISE VALLEY AREA							
DISMAL SWAMP	SCS	7050	29.2	25.1	86%	25.0	24.3
TRUCKEE RIVER							
MOUNT ROSE SKI AREA	SCS	8850	38.5	41.4	108%	41.4	41.4
INDEPENDENCE LAKE	SCS	8450	41.4	41.2	100%	41.2	----
BIG MEADOWS	SCS	8700	25.7	22.3	87%	22.3	22.3
INDEPENDENCE CAMP	SCS	7000	21.8	22.4	103%	22.2	22.1
INDEPENDENCE CREEK	SCS	6500	12.7	17.9	141%	18.3	19.4
LAKE TAHOE BASIN							
HEAVENLY VALLEY	SCS	8800	28.1	28.8	102%	28.8	28.4
HAGANS MEADOW	SCS	8000	16.5	21.6	131%	22.6	22.7
MARLETTE LAKE	SCS	8000	21.1	22.8	108%	22.7	22.6
ECHO PEAK	SCS	7800	39.5	45.8	116%	45.4	----
RUBICON NO. 2	SCS	7500	29.1	27.3	94%	27.1	26.1
WARD CREEK NO. 3	SCS	6750	39.4	38.0	96%	38.0	36.8
FALLEN LEAF LAKE	SCS	6300	7.0	15.8	226%	15.8	14.9
CARSON RIVER							
EBBETTS PASS	SCS	8700	38.8	----	----	31.1	30.8
POISON FLAT	SCS	7900	16.2	21.8	135%	21.8	21.9
WALKER RIVER							
VIRGINIA LAKES RIDGE	SCS	9200	20.3	16.8	83%	16.7	16.7
LOBDELL LAKE	SCS	9200	17.3	14.4	83%	14.4	14.1
SONORA PASS BRIDGE	SCS	8750	26.0	23.2	89%	23.0	23.1
LEAVITT MEADOWS	SCS	7200	8.0	15.2	190%	15.1	14.5
OWENS RIVER/MONO LK.							
GEM PASS	LADWP	10750	31.7	34.0	107%	34.0	34.0
SAWMILL MEADOW	DWR	10300	19.4	17.0	88%	17.0	17.0
COTTONWOOD LAKES	LADWP	10200	11.6	----	----	----	----
BIG PINE #3	LADWP	9800	17.9	21.6	121%	21.6	21.0
SOUTH LAKE	LADWP	9600	16.0	18.1	113%	18.0	17.9
MAMMOTH PASS (RP)	USBR	9500	42.4	36.4	86%	36.4	36.4
MAMMOTH PASS-6 TANKS	USBR	9500	----	----	----	----	----
ROCK CREEK	LADWP	8200	----	15.1	----	15.1	15.2

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

AREA	JANUARY	FEBRUARY	MARCH	APRIL	MAY
CENTRAL VALLEY NORTH	45	70	90	100	75
CENTRAL VALLEY SOUTH	45	65	85	100	80
NORTH COAST	40	60	85	100	80



❄❄❄❄❄ SNOWLINES ❄❄❄❄

VOICE MAIL has been installed on all snow surveys office phone lines. This new service will enable staff to respond as quickly as possible to inquires. Additionally, the Program has acquired a cellular phone so messages can be retrieved from the field. Please note the following as well.

SNOW SURVEYS DATALINE is (916) 653-8292. If your normal method of reporting data is by telephone please leave your message by course number first, the course name, the date, the average depth and average water content. Remember, the date of measurement is important. For sensor data, the information is in the same order followed by snow manometer, precipitation manometer, if appropriate. For all other business please call the appropriate individual for the quickest response. These numbers are as follows

Frank Gehrke, Chief	916-653-8255
Dave Hart, Field Activities Coordinator	916-653-4541
Matt Colwell, Water Supply Forecasts	916-653-8273
Bob Newton, Full Natural Flow	916-653-9485
Jueneata Nossett, Precipitation	916-653-0767

JACK PARDEE retired at the end of 1992 with 37 years of State service. Many of these years were with the Snow Surveys Program. Congratulations and best wishes. Frank Gehrke has replaced Jack as Chief of the Snow Surveys Program.

1992 SNOWFLAKE AWARD recipient was Doug Woodman of the Kings River Water Association awarded at the 38th Annual Meeting of the Cooperators. This award is given to individuals who have a long standing commitment to the snow surveys program and activities in California.

SNOWPACK - Snow data is a major index of spring and summer runoff from Sierra Nevada watersheds. April 1 data historically reflects the magnitude of the snowpack at or near the maximum seasonal accumulation. Averages are based on April 1 data for the period 1941-1990 (50 years, except for data sites established after 1941).

PRECIPITATION - averages are based on April 1 data for the period 1941-1990 (50 years, except for data sites established after 1941).

RUNOFF AND FORECASTS - Runoff data and runoff forecasts are shown as unimpaired values. Unimpaired runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Forecast of runoff assumes median conditions subsequent to the date of forecast.

Runoff probability ranges are statistically derived from historical data. The 80 percent probability range is comprised of the 90 percent exceedence level value and the 10 percent exceedence level value. This means that actual runoff should fall within the stated limits eight times out of ten.

Runoff averages for most streams are based on the 50 year period 1941-1990. For more details contact California Cooperative Snow Surveys, P. O. Box 942836, Sacramento, CA 94236-0001, (916) 653-8292.

On the front cover:
Yosemite National Park Rangers Tory Findley, Ginger Burley, Laurel Munson Boyers and Louise Johnson pose for a portrait atop O'Shaughnessy Dam after making the snow surveys through Jack Main Canyon in the Tuolumne River watershed.

Photo by Brent Findley

State of California—The Resources Agency
DEPARTMENT OF WATER RESOURCES
P.O. Box 942836
Sacramento CA 94236-0001

FIRST CLASS